

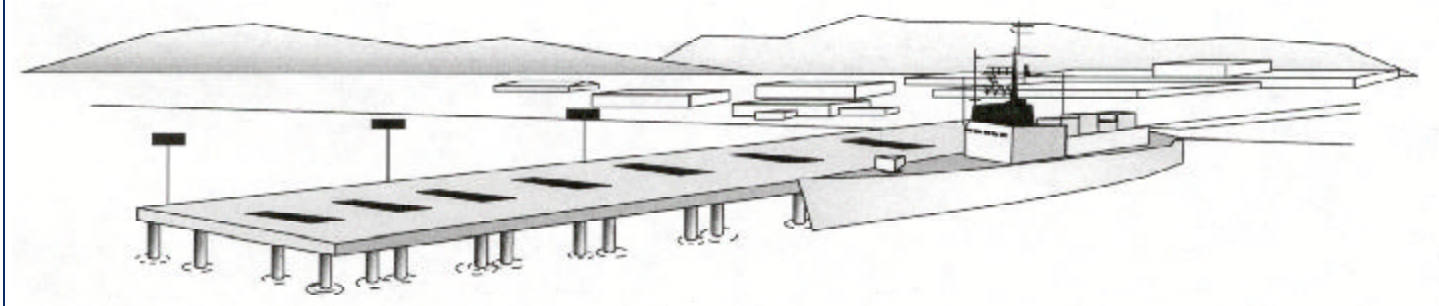
# N F E S C

Naval Facilities Engineering Service Center  
1100 23rd Avenue  
Port Hueneme, CA 93043-4370

## On The Waterfront

A Publication of the Shore Facilities Department






Volume 1.9



### ***Marine Corps Housing Automated System (MCHAS): Housing Management for the 21st Century***

Under the sponsorship of Marine Corps HQ, the NFESC Facilities Systems Division developed and implemented the Marine Corps Housing Automated System (MCHAS). MCHAS is an Oracle database system that allows the Housing Office Staffs of Marine Corps bases to manage on and off base Family Housing. The system, which replaced 13, separate, incompatible systems, is now in use at all Marine Corps Bases. By standardizing on one system, Headquarters, USMC Housing, is now able to easily compile and consolidate reports submitted by local housing offices.

MCHAS offers, but is not limited to, the following functional features:

-  Housing assignments and terminations.
-  Housing referral tracking.
-  Financial data and billing.
-  Occupancy and utilization reporting (includes PPV housing reporting).
-  Housing inspection scheduling.

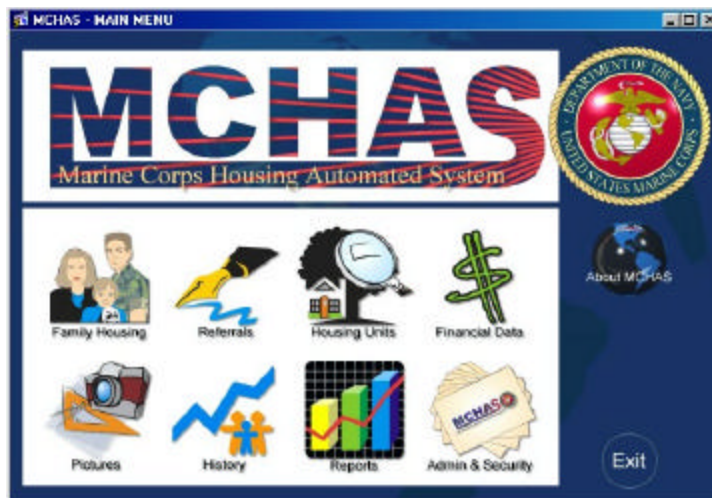
An MCHAS web site is available at [mchas.nfesc.navy.mil](http://mchas.nfesc.navy.mil) for general information and for downloading MCHAS upgrades. A toll free hotline ((877) 809-7213) is available for technical support. Plans for 2001 are to implement a consolidated MCHAS database server at NFESC and make the MCHAS application web based. Also planned in 2001, are

two MCHAS Users Training sessions and one MCHAS System Administrator Training session. These training sessions will be held at Port Hueneme, California.

**Kim Whittier** of the **NFESC Facilities System Division** led the development and implementation of MCHAS. **Sandy Clark of Headquarters, USMC Housing** is the sponsor. **Ted Gallo** from NFESC and **Dave Bianchi** and **Aaron Chambers** of **Intergraph** provided

implementation support and acted as a Support Work and Training (SWAT) team which arrived on-site and immediately tackled and resolved a wide range of problems. The Oracle programming was performed under contract by **MP Genius**.

According to Ms. Whittier, Marine Corps housing staff and users of MCHAS were instrumental to system success.



*continued on page 4*

## Roofing Asset Management: A Systematic Approach Plugs Money Leaks

**NWS Charleston** has put a new schedule in place for roofing repairs and replacements that will allow the activity to avoid over \$2.5M in roofing costs over the next 10 years. The schedule was developed with ROOFER, an Engineered Management System (EMS). ROOFER was implemented at NWS Charleston as part of the Roofing Asset Management (RAM) program. The RAM program develops and demonstrates an integrated roofing management system for low sloped roofs. The demonstration was conducted by **Mark deOgburn**, the NAVFAC Technical Center of Expertise for Roofing, **Dennis Blackwell**, the Base Civil Engineer, and NWS public works personnel. Plans are currently underway to conduct a second demonstration at the **Puget Sound Naval Shipyard** and to roll out implementation across the Navy.



*Better roofing management reduces costs.*

Poor roofing management costs the Navy millions of Real Property Maintenance dollars. The biggest problem is low-sloped roofs. To plug the money leak, facility managers need

better methods to acquire and maintain high quality roofs. RAM provides those tools through a comprehensive approach to roofing management. It establishes the roles of Navy and contract personnel in the management of Naval roofing and includes standard processes for acquisition, inspection, and maintenance of low sloped roofing. The full system will provide systematic procedures for evaluation of roofs, selection of repair strategies, determination of repair priorities, and identification of long-range program requirements.

Through RAM, we will ensure sustainment of roofs and maximum return-on-investment of roofing dollars.

A keystone of RAM is objective, credible roofing data. RAM's tool for data collection and management is an EMS called ROOFER which was developed by the Army's Civil Engineering Research Laboratory under partial funding by NAVFAC. When implemented through standard processes, ROOFER enables facility managers to rate their present roof condition, prioritize projects, and optimally allocate the budget. At the project level, ROOFER can help managers select repair and replacement strategies and identify work requirements. Features and benefits include:

- Inventory of roofing assets.
- Detailed roof plan drawings.
- Detection of roof defects using visual inspection to identify membrane and flashing problems and aerial infrared scans to locate areas of wet roof insulation.
- Development of :

### You've Got Mail!



We're delivering **On The Waterfront** by e-mail as well as ground mail, and the e-mail version is even in **color**! Here's how it works:

Each time an issue is published, an e-mail will be sent to each subscriber containing a brief summary of the issue's contents and a PDF copy of the issue (each issue is approximately 500KB). The free PDF file viewer is available at [www.adobe.com/prodindex/acrobat/readstep.html](http://www.adobe.com/prodindex/acrobat/readstep.html). Issues will still be distributed through ground mail and copies of the current and back issues will continue to be available on our web site at [www.nfesc.navy.mil/shore/otw.htm](http://www.nfesc.navy.mil/shore/otw.htm).

To subscribe, send an e-mail to **otw-request@lists.nfesc.navy.mil** with the word "subscribe" in the body of the message, or subscribe through the web at [www.nfesc.navy.mil/shore/otw.htm](http://www.nfesc.navy.mil/shore/otw.htm).

*continued on page 5*

## Runway Touchdown

The asphaltic concrete overlay on a runway at **NAS Fallon, Nevada**, developed cracks just 2 years after being placed. A **NAVFAC** pavement team, consisting of members of **NFESC**, examined the problem for **CINCPACFLT**. Working in cooperation with NAS Fallon, **EFAWest**, and **EFDSW**, the Pavement Team identified a solution that allowed NAS Fallon to inexpensively repair the runway. They recommended the use of a fog seal - a light application of a slow-setting asphalt emulsion diluted with water. The fog seal reduces the rate of deterioration and extends the life of the pavement surface. This solution was \$2M less than other available options and, in the words of the client, provided "a low cost alternative with substantial benefit."



*Runway at NAS Fallon - before.*

Because fog seals can reduce friction, they are not permitted on runway or high-speed taxiways on Navy airfields unless special needs or conditions exist, and then a waiver is required. The Pavement Team obtained the waiver and NAS Fallon worked diligently to meet the waiver requirements set forth in NAVFAC Guide Specification 02786. The fog seal was applied in a series of test sections to find an application rate that would provide both the required friction and pavement protection. **Del Pursel** from **DPWO NAS Fallon**, indicated that project success was due in most part to the importance they placed on test sections and subsequent skid resistance tests.

The fog seal was placed, and discussions with the clients **CDR Dave Faulk, PWO/ROICC, NAVFAC EFA Northwest NASF Detachment**, and **LTJG Griffin Stauffer, AROICC**, indicated that the project was a success. **CDR Faulk** indicated that he and the Base Commander are happy

with the results and recognize the cost savings involved with applying the seal and being able to increase the expected life of the surface. The fog seal project cost about \$300K - approximately \$80k for the fog seal and \$220k for the crack sealing and striping. The next best alternative, a new asphalt overlay, would have cost an estimated at \$2.6M.

The Pavement Team, led by **Charlie Schiavino**, the NAVFAC Technical Center of Expertise for Pavements, and NFESC engineers **Greg Cline** and **Mel Hironaka** (retired), used engineering and economic analysis to find the best solution. The first step was a runway assessment and pavement evaluation, which concluded cracking, initially caused by cyclic exposure to low temperatures, reflected through the overlay that was installed in 1997. The overlay was structurally adequate although the material composition and compaction were marginal. The marginal conditions caused accelerated surface wear and deterioration. The Pavement Team then used an economic analysis of alternatives to identify the solution with least net present value - continue maintaining the existing asphalt concrete overlay, beginning with the placement of a fog seal as early as possible.



*...and after.*

*continued on page 6*

**On The Waterfront** is an unofficial publication of the Shore Facilities Department, Naval Facilities Engineering Service Center, Port Hueneme, CA 93043-4370. Editorial views and opinions are those of the authors and not necessarily those of the United States Navy.

If you have any comments or questions, suggestions for future articles, or would like to receive copies of **On the Waterfront**, call or write to **Joe Connett, Code ESC64, (805) 982-1570; DSN: 551-1570; FAX: (805) 982-3481, or e-mail: connettja@nfesc.navy.mil.**





## ***From Research Through Development to Commercialization: Innovative Marking Paint for Navy Airfields***

NFESC's Real Property Maintenance Demonstration/Validation (DEMVAL) program will assist in the commercialization of airfield marking paint technology developed under NAVFAC's Small Business Innovative Research (SBIR) program. These paints will increase the life of airfield pavements and reduce the cost of pavement maintenance.

In FY98, NFESC was sponsored by **Vince Donnally**, the **Naval Airfield Criteria Manager**, and **Charlie Schiavino**, the **Naval Public Works Pavement Center of Expertise** to determine the cause of severe cracking within and surrounding painted asphaltic airfields. The investigation determined that the asphalt and paint cracking was a result of properties inherent to asphalt and stresses within commercially available airfield paints. To solve the problem, NFESC submitted an SBIR solicitation titled "Flexible Marking Paint for Asphaltic Airfield Pavements." Utility Development Corporation (UDC) located in New Jersey, performed the work under a Phase I effort and is currently involved in the Phase II work. When compared to commercial formulations, UDC's Phase I formulation has increased flexibility, increased tensile strength, increased adhesion, decreased drying time, and reduced costs. UDC's Phase II effort is scheduled for completion in June 2002. The DEMVAL program will be used to assist in transitioning this technology to both Naval activities and the commercial sector. Through a project under DEMVAL we will:

- Verify formulation properties.



*Acrylic Paint Cracking (APC) on asphaltic concrete at NAS North Island.*

- Participate in UDC's patch-test field demonstration.
- Demonstrate the paint on a Navy airfield to validate its performance.

Upon success, NFESC will develop a new marking paint standard for use in Unified Facilities Guide Specification (UFGS)-02761N "Pavement Markings." Following implementation, the improved paint will allow each asphaltic airfield to avoid costs up to \$130k.

For additional information, visit the project website at [demval.nfesc.navy.mil/markingspaint.htm](http://demval.nfesc.navy.mil/markingspaint.htm) or contact Dave Gaughen, NFESC Code ESC63, at commercial (805) 982-1065, DSN 551-1065, or e-mail [gaughencd@nfesc.navy.mil](mailto:gaughencd@nfesc.navy.mil).

*continued from page 1*

One key was three MCHAS User's Workshops that were held at NFESC, Port Hueneme, California. At these workshops, MCHAS users and MCHAS software developers interacted and quickly identified the functionality MCHAS has to offer its housing customers. These workshops gave the users a feeling of ownership while ensuring they got a system that meets their needs.

In January 2001, an MCHAS showcase was presented at the Professional Housing Management Association in Louisville, Kentucky. MCHAS received an overwhelming amount of positive feedback, not just from USMC Family Housing attendees, but from other agencies as well. Many questions were received from representatives from the Army,

Navy, and Coast Guard about possible implementation of MCHAS at their bases. Headquarters Marine Corps Housing views MCHAS as a success thanks to the outstanding and continued contributions made by Marine Corps base housing staff, NFESC project managers, and software developers from private industry. The MCHAS focus is to provide and improve prompt and quality housing automated services to our ultimate customer - the military member with or without a family.

For additional information, please contact Kim Whittier, NFESC Code ESC64, commercial (805) 982-1678, DSN 551-1678, or e-mail [whittierkl@nfesc.navy.mil](mailto:whittierkl@nfesc.navy.mil).

[Back to Page 1](#)

## NAVFAC Focus on Sustainability Meets Current and Future Needs

The Shore Facilities Department hosted a meeting of the NAVFAC working group for Sustainable Development in February 2001. The meeting was chaired by **Mike Chapman** of NAVFAC's Chief Engineers Office and was attended by

**Donna Calabrese** and **Bob Carlsen** from NAVFAC HQ; **Brian Cooper** and **Al West** from EFDLANT; **Byron Geddings** from SouthDIV; **Jim Graham** from SWDIV; **Wes Sakaguchi** from PACDIV; **Manu Dhokai** from EFA CHES; and **LCDR Bill Anderson, Joe Connett, Rick Gardner, Gary Gasperino, Jim Heller, Allen Miller, Glen Sittel, and Preston Springston** from NFESC. Attendees discussed policy, OPNAV and NAVFAC

Instructions, implementation of sustainable design principles in facility projects, and metrics to measure progress toward goals and training. They developed plans to accelerate NAVFAC's continuing implementation of sustainability principles.



NAVFAC Sustainability Team members  
at the Energy Demonstration Facility.

Sustainable development is usually defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

In a January 2001 letter to NAVFAC Commanders, **RADM Johnson** stated "Sustainable Development is an integrated approach to facility engineering and management. It is important that all NAVFAC personnel be well versed in sustainability concepts and principles."

The meeting included presentations from the NFESC Shore Facilities, Environmental, and Energy and Utilities Departments describing the role that NFESC is playing in sustainability. The Shore Facilities presentation described our development, demonstration, and implementation of facilities technologies which increase the sustainability and reduce the cost of Naval facilities.

**Rich Spiessl** of the Naval Base Ventura County (NBVC) Public Works Department (PWD) led the participants on a

*continued on page 7*

*continued from page 2*

- Condition indexes for flashings, membrane, insulation, and overall roof condition.
- Repair and replacement strategies.
- Project evaluation to determine if it is more cost-effective to make repairs or replace the roof.
- Work plans to document the recommended action.

ROOFER uses a standard condition index, the Roof Condition Index (RCI), which is derived from indexes for the membrane (MCI), flashing (FCI), and insulation (ICI) components of a roofing system. A roof's condition is determined by visual inspections for signs of distress and nondestructive moisture surveys. The indexes provide an objective, consistent measure of roof condition and required repairs.

The demonstration of RAM at NWS Charleston was conducted under the Real Property Management Demonstration/Validation (DEMVAL) program. The project is described at the DEMVAL Roofing Asset Management web page at [demval.nfesc.navy.mil/ram.htm](http://demval.nfesc.navy.mil/ram.htm).

ROOFER is only one of the EMSs that NFESC is helping activities put in place to improve their facility management. PAVER is used to manage the airfield pavement at all Navy and Marine Corps Air Stations. Demonstrations of BUILDER, which manages buildings, are scheduled for this Fall. The development of WHARFER, which will help manage piers and wharfs, is described in another article in this issue.

For additional information, visit the DEMVAL web page or contact Mark deOgburn, NFESC Code ESC63, at commercial (843) 820-7047, or e-mail [deogburnm@nfesc.navy.mil](mailto:deogburnm@nfesc.navy.mil).

[Back to Page 2](#)

## Ship Launching Technology Takes a Quantum Leap

The next generation of ship launching technology is under development at Bath Iron Works in Maine. The \$200M Land Level Transfer Facility, or LLTF, allows DDG and LPD class ships to be constructed on a level surface then transferred horizontally to a floating drydock for launching. This new design solves many of the problems that resulted from the traditional practice of building a ship on an incline, transferring the weight to a launching cradle, and then sliding the ship downhill into the sea. Construction and certification of the first two launchways was completed in February 2001. According to **Captain Richard Hepburn, Supervisor of Ship-building, Conversion and Repair, Bath, Maine**, "Fifty percent of the Navy's surface combatant construction program is handled by Bath Iron Works. On-time completion and certification of the LLTF is critical to this program." Construction on the next DDG class began in the new facility in March 2001. **Bill Leary, the NAVFAC Technical Center of Expertise for Drydocks**, is working with **Frank Langford, Nancy Jacobs**, and **Richard Hawkes** from NAVSEA, Bath Iron Works, the construction contractor, and design engineer to ensure that the LLTF will meet the requirements of MIL-

STD-1625C for Drydock Certification. Mr. Leary is the designated NAVFAC E-NET Drydock Consultant and manages the Drydock, Marine Railway, and Building Way Certification Program for NAVFAC.

Until recently, ship-launching technology had remained basically unchanged throughout recorded history. For as long as large ships have been built, most of those ships have been end launched on inclined sliding launchways. We've all seen



*Launch of the USS Winston Churchill (DDG81) on traditional inclined launchway at Bath Iron Works.*

photographs of these launches. Speeches are made, a bottle of champagne is broken over the bow, and the ship gracefully slides down the ways to meet the sea for the first time. It looks pretty slick, but this method is inefficient and risky. For starters, the ship must be built on approximately the same incline as the launchway. In most cases this is about 3 degrees. Imagine trying to build a house where everything must be tilted 3 degrees. Plumb bobs won't work, levels won't work, and stacking materials is difficult. Then the day before launching, the ship's

weight must be transferred from the blocks on which it was constructed to a specially built cradle that sits on wooden skids running the full length of the ship. Cradle construction and weight transfer are costly and time consuming. The skids,

*continued on page 9*

*continued from page 3*

The Pavement Team recommended the seal in NFESC Report SP-2054-SHR. The letter required compliance with NAVFAC Guide Specification NFGS-02786 (highlighting the requirement for test sections) and the skid resistance (friction) tests be performed in accordance with DM 21.9, "Skid Resistance Runway Surfaces," on the test sections prior to application of the fog seal to the entire runway.

Five application rates were chosen for a small test area and the three that resulted in the best appearance were selected for the 1,000-foot test sections. All three test sections had inadequate skid test results (the application rate of 0.10 gallon-per-square yard was borderline) therefore, one additional test section was completed, and with adequate skid

results, that mix was approved. The seal was applied in the Fall of 2000 at an application rate of 0.08 gallon-per-square yard and all cracks were routed and sealed. In January 2001 the Pavement Team followed up the application with a site visit to NAS Fallon to inspect the fog seal and verify that the pavement was performing as expected. Mr. Del Pursel encourages other people who are interested in seeing this success to visit NAS Fallon.

For additional information contact, Greg Cline, NFESC Code ESC63 at commercial (805) 982-3655, DSN 551-3655, or e-mail [clinegd@nfesc.navy.mil](mailto:clinegd@nfesc.navy.mil) or Del Pursel, DPWO NAS Fallon at commercial (775) 426-2398, DSN 890-2398, or e-mail [purseld@fallon.navy.mil](mailto:purseld@fallon.navy.mil).

[Back to Page 3](#)

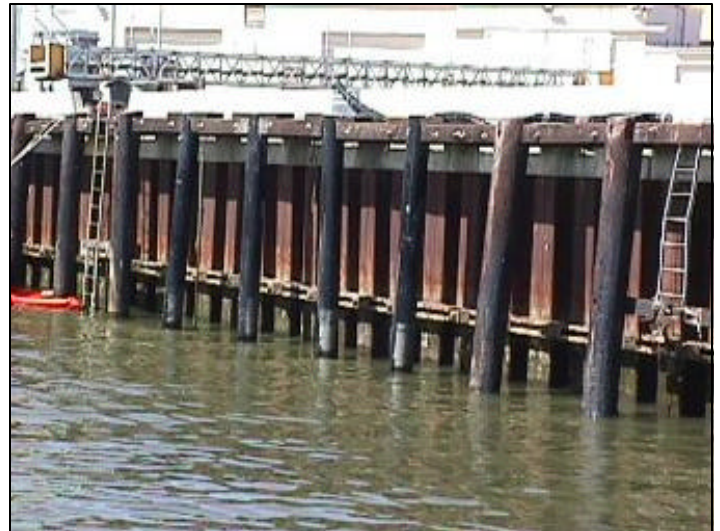


## *The Navy Embarks on WHARFER Development: Just What the Dock Ordered*

The Navy has embarked on the development of WHARFER, a tool to enable the Navy to manage waterfront facilities at the lowest lifecycle cost. WHARFER is an engineering management system (EMS) that will be developed by NFESC in cooperation with the Army's **Civil Engineering Research Laboratory** (CERL). It builds on the Navy's track record of success with EMSs. We use PAVER, in cooperation with **Engineering Field Divisions**, to manage the maintenance of airfield pavements at all Navy and Marine Corps Air Stations. Our success with ROOFER is described in another article in this issue.

The challenge to the WHARFER development team is to establish a waterfront maintenance management system that will enable:

- An accurate and complete inventory of the systems and components that compose and support Naval piers and wharves.
- Documentation of the interrelationships of the pier and wharf systems and components (e.g., bearing piles, decking, fendering system, cathodic protection, and utilities).
- An inspection process that provides accurate, objective, and creditable measures of component, system, and facility physical condition.
- Prediction of changes in the conditions of the systems and their components over time both with and without maintenance.



*Wharfs like this one at NCBC Port Hueneme will be managed with WHARFER.*

- Collection of system information through the use of rapid inspection technologies such as hand held computers.
- Estimates of the impact of system performances on overall pier and wharf performance and inspection frequency requirements.

At the heart of all EMS tools and what makes them unique and valuable is the physical condition index (CI). A CI must be developed for each pier/wharf component to have a truly integrated EMS. These indices allow one to directly compare the physical integrity of like components. For example,

*continued on page 8*

*continued from page 5*

tour of the Navy's Energy Demonstration Facility. This building, which will soon be the home of the NBVC PWD, was designed to fully demonstrate "state-of-the-shelf" technologies with applicability to Navy facilities worldwide. It was developed in conjunction with NBVC's role as one of two Navy Energy Showcases and will serve as an example of the importance the Navy places on energy efficiency. The design goals included 100% natural daylighting during normal working hours and zero net energy use from the electric utility power grid. High indoor air quality was also a requirement. Environmentally sustainable building technologies and

products were used where feasible. Everything from sustainable landscaping to use of direct digital controls was integrated into the design.

Information about NAVFAC's focus on sustainable development is presented in NAVFAC's Foundation Knowledge web site at [www.foundationknowledge.com/library/sustainable\\_development.htm](http://www.foundationknowledge.com/library/sustainable_development.htm).

For additional information, contact Mike Chapman, NAVFAC CHENG at (202) 685-9175 or e-mail [chapmanm@navfac.navy.mil](mailto:chapmanm@navfac.navy.mil), or Joe Connett at commercial (805) 982-1570, DSN 551-1570, or e-mail [connettja@nfesc.navy.mil](mailto:connettja@nfesc.navy.mil).

continued from page 7

a concrete pier decking with a condition index of 70 in Pearl Harbor, Hawaii, will have the same relative need for repair as a concrete pier decking with a CI of 70 in Norfolk, Virginia. The facility index will be the compilation or integration of that facility's component and system CIs. The facility index will allow those responsible for pier maintenance and repair to make direct comparisons of physical condition among like facilities when deciding how funding will be allocated. An added benefit is that by determining condition indices for like facilities of different ages, we can use models to make predictions of future condition indices for each facility. This information will help optimize maintenance and repair decisions for these facility types.

Members of NFESC, NAVFACHQ, and CERL held a kick-off meeting in January 2001 at the Navy Yard to finalize plans for WHARFER development.

**Harry Singh**, Head of the NAVFACHQ Public Works Office, opened the meeting. He described emerging issues in facilities management and provided general WHARFER development guidelines. **Bob Carlsen**, NAVFACHQ BDD, **Milon Essoglou**, NAVFACHQ Chief Engineering Office, and **Charles Schiavino**, NFESC EMS Development Coordinator, helped to define overall WHARFER focus and major objectives for FY01. The meeting was conducted by **David Pendleton**, NFESC WHARFER Project Lead. Other members of the development team include **Dr. Mo Shahin**, Research Engineer at CERL, who has been directly involved in EMS tool development for 27 years; **Al Antelman**, who has led the NFESC development of related innovative facilities management tools, **Tom O'Boyle**, Head of the NFESC Ocean Construction Division, **Alex Viana**, Lead for the NFESC East Underwater Inspection Program, **Chris Inaba**, NAVFAC Public Works Technical Consultant on Waterfront Facilities Maintenance, **Alex Miller**, NFESC Mechanical Engineer, and **Dr. Robert Reinke** of Intelligent Interface Technology (IIT) Corp., who has successfully collaborated with CERL in past EMS Tool development efforts.

The full development of WHARFER is expected to take several years. Work in FY01 will focus on:

- A baseline analysis of current Navy waterfront facilities processes. This will help assure WHARFER is consistent with actual user requirements and will allow for an estimate of return on investment for WHARFER development efforts.
- Development of condition entry and inventory models for WHARFER. These models provide the framework for user interfaces and inventory databases.

- Identification and development of condition indices for critical waterfront facilities systems. As stated earlier, this is the heart of the system and will take a major effort to analyze, develop, test, and verify.
- The development of a WHARFER 1.0 prototype system. This will include inventory and condition entry schema along with user interfaces and the first steps toward condition indices. This is the main product to be provided to the sponsors at the end of the first year of WHARFER development.
- Estimates of current waterfront structures sustainment cost factors.

NFESC is taking an integrated approach to WHARFER development. Not only does the NFESC WHARFER development team include members from the Army's CERL and various divisions and departments within NFESC, but also potential users and other Navy stakeholders. Key Navy waterfront experts have been asked to help guide WHARFER development to help assure it meets actual needs. A critical aspect of the user's participation is the user's workshops. The first of these "User's Meetings" was held in February 2001 at North Island, San Diego, at the invitation of **CDR Ken Branch**, CNRSW N441. The workshop was hosted by **Glenn Rogers**, CNRSW. Other local waterfront experts providing important operational insights included **Mike McAndrew**, **Douglas Melland**, and **Terry Zimmer** of Public Works Center, San Diego, and **Charles Singletree** of North Island Port Operations. A similar meeting was held in Norfolk in March 2001. Participating Navy waterfront facilities experts included **Dave Curfman**, Head of the NAVFAC Engineering Innovation and Criteria Office and meeting host; **Frank Cole**, NAVFAC Engineering Innovation and Criteria Office; **John Lynch**, NAVFAC Waterfront and Structural Criteria; **Eddy Theisz**, PWC Norfolk Structural Engineer; **Chuck Abell**, LANTDIV Base Operations Mechanical Engineer; **Timothy Followell**, PWC Norfolk Engineering Technician; and **Jim McFarland**, PWC Norfolk Electrical Engineer.

For additional information, contact Dave Pendleton, NFESC Code ESC64, at commercial (805) 982-4234, DSN 551-4234, or e-mail [pendletonde@nfesc.navy.mil](mailto:pendletonde@nfesc.navy.mil), or visit the WHARFER project page at [wharfer.nfesc.navy.mil](http://wharfer.nfesc.navy.mil).





## ***We've Got the Solutions if You've Got the Problems***

NFESC manages the OPNAV/NAVFAC RPM DEMVAL program to *DEMONstrate* and *VALidate* technologies to reduce the Real Property Maintenance backlog and increase facilities sustainability. We've put technologies in place at Naval activities from **NAVSTA Roosevelt Roads** in Puerto Rico to **NAF Misawa** in Japan. Technologies have been implemented or are soon to be implemented in 16 activity projects. Successes to date includes a Roofing Maintenance plan at **NWS Charleston** which will reduce roofing costs by over \$1M during the next 5 years and placement of Hangar Floor Coatings that last three times as long at **NAS Dallas/Fort Worth**. The full story is at [demval.nfesc.navy.mil](http://demval.nfesc.navy.mil).

We're looking for new opportunities to save the Navy money and we'd like your help. If you know of any facilities problems that would benefit from a technological solution or if you've heard of a potentially valuable new technology that we should demonstrate and validate, please let us know.

Our target areas, because they show the greatest potential for saving, and the NFESC technical leads for the areas, are:

- ☞ Composites and Structural Concrete (Dr. Javier Malvar, [malvarlj@nfesc.navy.mil](mailto:malvarlj@nfesc.navy.mil))
- ☞ Corrosion Protection (Dan Polly, [pollydr@nfesc.navy.mil](mailto:pollydr@nfesc.navy.mil))
- ☞ Concrete Pavements (Charlie Schiavino, [schiavinocj@nfesc.navy.mil](mailto:schiavinocj@nfesc.navy.mil))
- ☞ Installation Management (Al Antelman, [antelmanab@nfesc.navy.mil](mailto:antelmanab@nfesc.navy.mil))
- ☞ Roofing (Mark deOgburn, [deogburnmj@nfesc.navy.mil](mailto:deogburnmj@nfesc.navy.mil))

*continued on page 10*

*continued from page 6*

one on each side of the ship, are supported by the launchways. The launchways run from the front of the ship past a point deep underwater out in the harbor where the ship will be afloat. A lot can go wrong with an 18,000 ton ship sliding down hill at 40 miles per hour, and there's no stopping it once started. Most common is damage to the ship or launchways due to excessive point loading during launching.

The LLTF solves these problems by allowing ships to be constructed on a level surface then transferred horizontally to a floating drydock for launching. Ships will be supported during construction by as many as 34 equally spaced beams that sit on the level construction slab. Two pairs of crane (trolley) rails that straddle the ship's centerline and run under the ends of the beams are built into the slab. When the ship is ready for launching, the floating drydock is moved into a position where it is butted up against the construction slab and then flooded down until it rests solidly on a wood and reinforced concrete grid 15 feet below sea level. The floating drydock also has two pairs of trolley rails built into its deck. When properly positioned on the grid, the floating drydocks trolley rails align perfectly with the trolley rails on

the construction slab with short transition pieces bridging the gap. Hydraulic trolleys are then placed on the rails under the ends of every beam. The trolleys, which lift the beams a few inches off the slab with hydraulic rams, are all interconnected to ensure synchronous operation. The trolleys also have hydraulic motors that move the ship at 6 feet per minute onto the floating drydock. After the ship is moved into position on the floating drydock, the drydock is moved off the grid and out into the river where it is ballasted down to float the ship. The whole process takes approximately 3 hours. It's not as exciting as the old method, but it's far safer. Besides being able to stop the operation at any time should a problem arise, the hydraulic lifting system provides complete control of point loading on the ship. The LLTF has the added versatility of being able to drydock ships for repair or overhaul by reversing the process. Three parallel launchways are being built at Bath Iron Works that will allow the simultaneous construction (or repair) of three ships.

For more information contact Bill Leary, NFESC Code ESC62, at commercial (808) 474-5952 or e-mail [learywp@nfesc.navy.mil](mailto:learywp@nfesc.navy.mil).

[Back to Page 6](#)

Want more information on  
how to put NFESC to work for you?



Call us at

1-888-4 THE ESC

(1-888-484-3372)

E-mail us at [help@nfesc.navy.mil](mailto:help@nfesc.navy.mil)

or join us on the Web at

[www.nfesc.navy.mil](http://www.nfesc.navy.mil)



Back Issues of  
“On the Waterfront”  
are available  
through  
the Shore  
Facilities  
web page at:

[www.nfesc.navy.mil/shore/otw.htm](http://www.nfesc.navy.mil/shore/otw.htm)

### ABOUT THE ESC

We are the Navy’s Center for specialized facilities engineering and technology.

In partnership with our customers we deliver quality products and services in:

- + Shore, Ocean, and Waterfront Facilities
- + Environmental
- + Amphibious and Expeditionary Operations
- + Energy and Utilities

We provide solutions to problems through engineering, design, construction, consultation, test and evaluation, technology implementation, and management support.

We leverage technology to enhance the effectiveness and efficiency of our customers. We use existing technology where we can. We identify and adapt breakthrough technology when appropriate.

We perform research and development when required to meet Navy and Marine Corps needs.

*continued from page 9*

The web site shows the proposals we’ve received so far. We’re also looking for activities that would like to partner with us on technology demonstrations. We examine all the proposals we receive and evaluate them on the basis of benefit to the Navy, customer interest, and probability of success. If you have any suggestions and would like to work

with us to develop a proposal, contact Joe Connett at commercial (805) 982-1570, DSN 551-1570, or e-mail [connettja@nfesc.navy.mil](mailto:connettja@nfesc.navy.mil), or contact one of the technical leads.



[Back to Page 9](#)

## SHORE FACILITIES DEPARTMENT POINTS OF CONTACT

Name	Code	Phone No.	DSN	E-mail
Don Brunner, Department Head	ESC60	(805) 982-1226	551-1226	brunnerde@nfesc.navy.mil
Preston Springston, Program Manager	ESC60PM	(805) 982-1225	551-1225	springstonps@nfesc.navy.mil
Bob Odello, Director Waterfront Structures Division	ESC62	(805) 982-1237	551-1237	odellorj@nfesc.navy.mil
Vacant, Director Waterfront Materials Division	ESC63	(805) 982-	551-	
Joe Connett, Director Facilities Systems Division	ESC64	(805) 982-1570	551-1570	connettja@nfesc.navy.mil
Dr. Rickie Jones, Director Security Engineering Division	ESC66	(805) 982-1581	551-1581	jonesrl@nfesc.navy.mil

## OTHER NFESC DEPARTMENTS POINTS OF CONTACT

Name	Code	Phone No.	DSN	E-mail
Mary Lingua, Department Head Energy and Utilities	ESC20	(805) 982-3534	551-3534	linguamg@nfesc.navy.mil
Mark Hollan, Department Head Amphibious and Expeditionary	ESC30	(805) 982-1456	551-1456	hollanme@nfesc.navy.mil
Steve Eikenberry, Department Head Environmental	ESC40	(805) 982-3584	551-3584	eikenberryse@nfesc.navy.mil
Mike Atturio, Department Head Ocean Facilities	ESC50	(805) 982-1001	551-1001	atturiomj@nfesc.navy.mil



## On The Waterfront

### ***In This Issue***

- \* Marine Corps Housing Automated System (MCHAS): Housing Management for the 21st Century
- \* Roofing Asset Management: A Systematic Approach Plugs Money Leaks
- \* Runway Touchdown
- \* From Research through Development to Commercialization: Innovative Marking Paint for Navy Airfields
- \* NAVFAC Focus on Sustainability Meets Current and Future Needs
- \* Ship Launching Technology Takes a Quantum Leap
- \* The Navy Embarks on WHARFER Development: Just What the Dock Ordered
- \* We've Got the Solutions if You've Got the Problems

### MAILING LIST

- ☐ Please add me to the mailing list.
- ☐ Please add me to the e-mail distribution list.
- ☐ Please remove me from the mailing/e-mail list.
- ☐ Please update my address.

Name \_\_\_\_\_

Title \_\_\_\_\_

Firm/Organization \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail \_\_\_\_\_

Fax or e-mail to: Joe Connett (805) 982-3481, [connettja@nfesc.navy.mil](mailto:connettja@nfesc.navy.mil). To subscribe to e-mail distribution, send an e-mail with the word "subscribe" in the body to "otw-request@lists.nfesc.navy.mil."

DEPARTMENT OF THE NAVY

COMMANDING OFFICER  
NFESC  
1100 23RD AVE  
PORT HUENEME CA 93043-4370

OFFICIAL BUSINESS

